***Introduction to Increase Network Capacity Using EtherChannel***

***What is EtherChannel?***

Allows you to bundle a group of connections together that way you can load balance across them.

ASIC connections, you can load balance across 2, 4, or 8 max connections.

The only problem with this type of network is that if someone unplugs a link it could mess up the network. That’s why we need to use one of the two protocols to protect against this.

PAGP- Desirable / AUTO

By choosing the correct mode the switch will figure out which protocol to use.

LACP- Active / Passive

So when you configure one side of the connect to active and other side to passive. It will use LACP

You need to have the right channel group, using the right protocol, and every interface in both groups need to have the same configuration.[vlan, trunking, configurations]

* Speed
* Duplex
* Access/trunk
* Access vlan
* Trunk vlan list
* Native vlan
* Stp settings

Based on the options below, which of the following configurations would indicate you were using Cisco's proprietary LAG protocol?

Switch A: desirable | Switch B: Auto

***Configuring and Verifying EtherChannel***

Setting up EtherChannel manually and dynamically.

>#Interface range gigabit thernet 1/0/1-2

>#Channel-group 1 mode on

Now you have an etherchannel running

#show etherchannel summary

Shut your interfaces down while you are working on your interfaces with etherchannel because the ports will go into an error state. Because when you start to configure the network will break.

The only way to fix and error state of a port is to turn them off then turn them back on.

#Show run interface port-channel 1

It shut down the physical interfaces and it also shut down the virtual interface.

># interface port-channel 1

>#shutdown

># no shutdown

>#show spanning-tree

We can now see that the cost is 3 because we bundled them together

If you want to configure the interface on the etherchannel you need to make the changes to the port channel

#Show run int port 1

#Show run int gi1/0/2

#Show interface status

Setting up etherchannel automatically

Active and passive are like positive and negative. Setting both sides to active or desirable.

>#int range gi 1/0/1

># channel-group 10 mode active

#show etherchannel summary

#show spanning-tree

We can see the cost of both sides to make sure it is up.

When you hardcode things you are asking for trouble and you want to make sure your configurations are perfect the first time.

Which of the following commands will display a per-channel group summary of EtherChannel?

#Show etherchannel summary

***Modifying EtherChannel Load Distribution***

Look at the default load distribution method eatherchannel uses and how to change it.

* Source + stuff
* Destination + stuff
* Source – destination + stuff

>#port-channel load-balance ?

It is up to you to choose which value will give you the best option to load balance.

Let see what the default load-balance our switch has.

#show etherchannel load-balance

To set EtherChannel load-balancing to use the source MAC address to influence its decision, which of the following global configuration commands should you use?

Port-channel load-balance src-mac